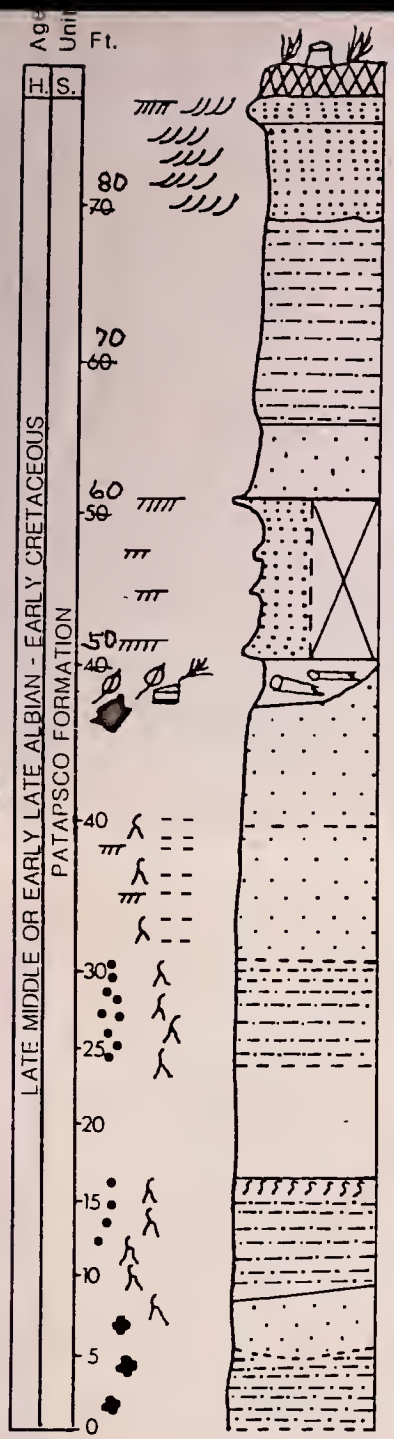
POTOMAC - ARCTIC

UNITED STATES
DEPARTMENT OF THE INTERIOR

DI-6

APPROVED DECEMBER 1945



Description	Interpretation
Soil Layer	Recent Weathering
Sandstone; light yellowish grey to brown, epsilon cross-bedded, limonite cemented cap at top.	Channel margin deposit of a shallow laterally migrating stream.
Siltstone; limonite yellow and grey mottled massive.	Possible distal levee deposit on which soil weathering processes had begun.
Clay; silty, mottled greenish grey and red, mottled.	Flood basin deposit which soil leaching and redeposition had occurred.
Sand white to red mottled, friable, cross-bedded, limonite cemented ledges at top and base; partially covered and possibly slumped.	Channel margin deposit of a shallow, laterally migrating stream.
Clay; lenticular, medium grey massive, with fossil plants.	Abandoned channel subject to periodic flooding.
Siltstone; grey and yellow mottled, massive.	Leaching zone (A horizon) of a soil.
Siltstone; grey with red root mottling and red ferruginous staining on bedding surfaces.	Zone of accumulation (B horizon) of a subtropical soil developed on a flood plain.
Siltstone; fining upward to a mudstone; greenish grey with limonite spherules and root mottling.	Flood plain accretion surface (distal levee) overprinted by soil forming processes.
Clay; reddish and greenish mottled, slickensided, intensely red at base greyer upward.	Flood basin deposit on which a gley soil was developed.
Mudstone; fining upward to a clay; grey, red and brown.	Gley soil developed on flood basin deposit.
Mudstone; yellow, red and brown.	Flood basin soil deposit.
Siltstone; yellowish grey and red mottled, spherules and root casts.	Distal splay or levee deposit weathering to soil.
Mudstone; red and grey mottled, concretions.	Flood plain soil.

Fig. 5 -- Geologic section of the rocks exposed at the old West Brothers Brick Pit (Stop 3). Section measured by Leo J. Hickey and Norman Frederiksen, 1984. For key to symbols see Fig. 2.

6/13/84

841 Temp 75-100°

WEST BROTHERS BRICK PIT
PATAPSCO FM
Lower K.

SECTION MEASURED

SECTION predominantly lenticular
CLAY + midst an lower
2/3rds
with prominent plastic
lavender red bed
in mid slope w flat
upper contact and
lenticular lower.

Leaf bed lenticular
CLAY thinning in
in both directions
from center of
section 16

Above this is a [illegible]
white [illegible]
Kp. capping hill top.

SECTION STARTS AT BASE
of exposed face of
CLAY PIT.

0' UNIT 1
mottled ~~greenish grey~~
~~and~~ ferrug. red w/gr. grey
mudst.
Thoroughly slickensided
& mottled.

Surface weathers w/
~~red~~ grey and reddish
& blackish brown
chips
& red w/ grey mottling
irregular sandy protusions
cracks up to 1 ft
in diameter occur
occasionally scattered
in unit.
These become incr.
abundant upward
to cont. w. unit 2

3.5 UNIT 2
Yellow grey silt w
red "root" mottling
basal contact ~~off~~
dips upward slightly
on either side of

8+1

line of section
red & ocher yellow
planes & surfaces
small occasional pyrolusite
dark lines 1-2"
on some slopes

Reddish mottling increasing upward
toward upper contact
Cones particularly abundant
in middle 2' of unit.

3.25 unit 3
Moist tannish yellow
red & brown mottled
"roots"
whi surface covered by
1/4" greenish grey chips
contact dips east.
through line of sect.

4.25 unit 4
Gradational contact
no greenish grey
red & brown mottled
moist w root casts
& small pyrolusite
spherics. soil.
surface sheets.
purplish gray

841

becomes darker & more
plastic clay upward
in becoming a plastic
clay about 4" above
base (some silt)
7.0 greenish & reddish stained
slightly mottled
[illegible] weakly
[illegible] soil horizon
looks like a soil

CONTACT extremely gradat.
in UNIT 5 but
level.
UNIT THINS to
about 1½ thickness
100' W & 30' E
7.5 UNIT 5 TRANSITION TO 6
CLAY ST.
reddish & greenish gray
mottled, w/ extensive
slicks.
strongly leached base
becoming [illegible]
[illegible]
7½ UNIT 6
Here the [illegible]
clay [illegible]
becomes predominant
a strong basal [illegible]

841

gradational
surface [illegible] w/
reddish spherules
silty clay all above have
root mottling.

1 1/2 9 1/2 feet UNIT 7
silt. pred grey w
reddish root mottling.
& red ferrug st. bedding
surfaces.
contact extremely
gradational.

3 3/4 UNIT 8
very dk. grey w limonite
yellow weathering

orange yell mottled
silt. massive
basal cont. gradational.

3 1/3 UNIT 9
medium grey
fossil leaf & pollen
drainy unit
basal contact w
a silt. pebble conglom.
+ lens.
much charcoal

8 41

MANY logs near middle
of unit.
deepest part of channel
1 1/2' below base of
unit 9 30' W
of its deepest
part

THINS TO 0' 15' EAST.

Fossil leaves 15' on
either side of
thalweg.

105 1.1' UNIT 10 mostly covered
interval staining w
o. & red echelons
S.S. SS ledges present
but area hummocky
possibly slumped &
disturbed
discrepancy 1 here

10 base
Ferry Y Avalanche
General SS ledge 6"
capping a white
fell amalite. Very SS
sample

72/3

All of this may be slumped however

5' ~~10½~~ UNIT 11 Albinpian

mottled greenish grey
local clay (silty)

To 2' ab.
then ferrug red
silty clay
[illegible]

4 Returning to mottled
grey lined

13.5 (12)

5' Silty
lamination yell & grey
mottles

(13)

72/2 UNIT 12
ferrug red sandstone
[illegible]
2' Terminus top of Hill

2 Soil top of hill

642 KENILWORTH x JACKSON

100

50

6/13/54

Hot PHC 90

142

Off Kenilworth Rd. ON AT End of 95

JACKSON ST.

STAIRS

54

Cardell

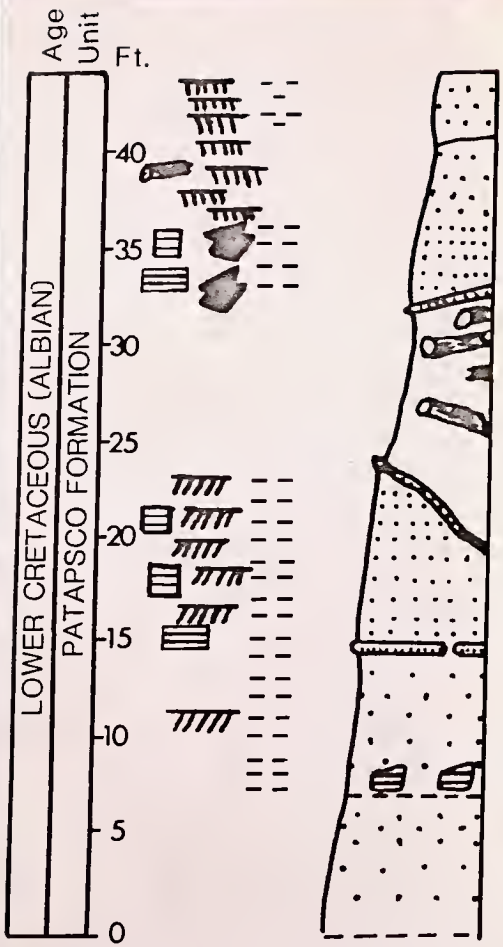
5

4

3

2

1



Description	Interpretation
Siltstone, tan and yellow with thin limonite ledges.	Overbank soil with periodic flood episodes.
Siltstone and sandstone interbeds, medium grey, poorly developed bedding, sub-rounded clasts of lignitized wood and charcoal.	Overbank deposits of the distal levee, recording periodic flood episodes and channel migration away from area.
Clay; medium grey, unbedded slightly fissle, basal contact downcutting and sheathed with limonite, abundant lignitized conifer logs ~~in~~ 6.5 feet above base.	Abandoned channel filled with fine-grained sediment and logs transported during high-water episodes.
Siltstone; mottled grey and yellow with limonite crusts, and clay rip-up clasts at base, coarsens upwards to a very fine-grained sandstone with limonite ledges and silicified wood, yellow and grey mottled.	Flood plain deposit recording periodic overbank deposition and periodic flood episodes. Channel migration toward area. Soil formation in upper portion.
Shale; medium grey, fissle, silty, with rare siltstone interbeds, coarsens upward to siltstone, grades into next unit.	Flood plain deposit recording channel migration toward area.

Fig. 4 -- Geologic section of the rocks exposed at the east terminus of Jackson Street, one mile south of Bladensburg, Maryland (Stop 2). Section measured by Leo J. Hickey and Norman Frederiksen, 1984. For key to symbols see Fig. 2.

842

An important stand back
from cliff face
E. NOTE dip of rock
50 to E

0 SECTION STARTS at base
7' of the stony soil

med grey, fissile silty
sh. w some silt.

2' also becomes silty
grades into unit 2

unit 2 basal cover zone
15' grey to yell. white
mottled silt
chippy to

wh. yellow grey to
yell. brown limonite
crusts on surface

near base contains
clay clasts ripped up
into silt
above this clay
mixing of clay + silt
silty

842

w limonite ST.

Limonite cemented
SILTST at top of hill
(a) 7.5' ab.
with numerous STICK x
twig impressions
& poorly preserved limonitized
wood.
Chips of silicified wood
LITTER slope above
this pit, to top of
UNIT 2

Above limonite ledge
UNIT 2 Grey & yell
grey mottled
Soil. no root CAST!

SILTST becoming v f g SS
upward

(b) Upper cont w channel
fill (UNIT 3 formed
by 2' limonite
cemented ledge
that ~~blops~~ cuts into
UNIT 2

8-12

UNIT 3
8'
(12' to 5)

Channel fill
w/ coarsening lower
contact
Filling medium grey
massive sl. fissile
claystone
- Wolfen sample

E

3' above base
log jam of lignitized
conifer logs
in same matrix
to top

Thalweg
of channel
filled w
Tic

W

UNIT 4
9'

SltSt + vfg SS
bedding nearly flat
sol'd.
Basal contact a
limonitic cem ledge

note ~~cl~~ clasts sub-rounded
clasts of wood &
charcoal in unit.
mod. grey -

842

Thin limonite layer at base

Red fines upward to a shale
Top of layer 1/2 mm
between 51 & 52
massive chippy w
silt beds
& log. frags.
increasing no silt layers
toward upward

UNIT 5 mottled tan & yellow
3 1/2' silt. w. limonite
& tinted is. h
slope weath on f

Pl on surface covered
in ...

All patches in general different
from the general with here
...
fade at base of section.

842

Section Three: Channel Entry

We have seen in the that became systematic free period (Unit 5) and then stopped again

Channel entry (Unit 3) may be roughly represented by an interval in Unit 4 above and is left to the reader.

Description	Interpretation
Trash	
Gravel, Sand, Silt	Fluvial Aggredational
Sand and silt: medium to light grey, friable sandstone fine to medium-grained planar and trough cross-beds, logs, marcasite concretions.	Fluvial; braided stream deposits.

Fig. 3 -- Geologic section of the rocks exposed along the Northwest Branch of the Anacostia River, 800 feet upstream from the crossing of Queens Chapel Road (Stop 1). Section measured by Leo J. Hickey and Norman Frederiksen, 1984. For key to symbols see Fig. 2.

843 Quebec Chapel Bell
& N.E. Pinacle

Equinox of Saturn

Etymy.

Play Sands & Lines

[illegible]

Planar & Bodies

[illegible]

No. Holocrac

[illegible]

12 Pacific

[illegible] Fellows
[illegible]
with Commencement
at Harvard [illegible] 1940.
Channels [illegible]
[illegible] due to
unorganized &
[illegible]

Hopefully the [illegible]
[illegible]
last

June 20, 1984

In Resolute Bay NWT

Packed boxes for field work

Picked up Kirk at 1:30 at Airport.

Met ~~Cmo~~ Petro Canada Team

El Santiago - Dorrie

Also told us of their work in Sverdrup Pass in 1982.

Rapid x Palynology has been completed

Took us there ~~maps~~ via Photographs

Left Resolute at 2:48 pm by Twin Otter Pilot Doug.

Very cloudy flight

5/20/84

to Ellesmere Broke through clouds in ~~Beid~~ Eclie Fiord

Tried to take Beid Fiord valley inland to Bauman but were forced to turn back by the low ceiling

Proceeded north up coast to Nest Fiord to North and were able to cross the divide into Bauman
Visibility often no more than 1/4 mile in cloud and snow. Snow cover 70-80%

Landed at point on S side of Starbuck Fiord after 6 passes through landing but very well done.
Temp. 38°F and partially sunny when landed but soon it began to snow and second hour later to drizzle. Made 7 pm schedule and were then able to make dinner. Finished about 10:30 pm
To Bed at 11:59 p.m in broad daylight. & drizzle.

7/21/84

Temp 40°C
Light rain clouds 10
wt 1500'E
Lt wind

84-4. Above camp on Stenkul
Fiord S side.
On S side of a steep
sided stream valley
exposing shale

15' coal seams separated
by dirty shale
much clay ironstone

Dip 70 W at perhaps 50°

[illegible]
[illegible] inlet.

84-6 about [illegible] strat

[illegible] float
monocot fragment
w/ [illegible] 3 [illegible] of venation

8

50 55.5
40.0
4
5
104.5

6/21/54

845 Coryphodon 166
in Cane Creek
unit w. clay ironstone
covers contact
Nelumbo

This is the so called
white sandy band
above the coal seam
that occurs at base
of slope.
Upward unit becomes
less carbonaceous
& more sandy
till top of slope
occurs covers
w. Platanus nobilis

—

Section start
1 845 x6 above coal
1 I → to Nelumbo
1 2,3 → to Coryphodont
3 → carbonaceous sand
Nelumbo - Coryphodon
8 1+, + Fe stained sand
carbon streaks
11-13 clean sand
13 and above stony pattern
1001 to top of plateau

6/21/84

Recopied NOTES from 845

845 STENKUL Fiord S side about 1 mi SW of CAMP on ~~SP~~ SPIT POINT.

WEATHER Cold 38° W 20 Kn. WIND from N.W. & SNOW & RAIN

Coryphodon loc. IN CARBONACEOUS SANDY UNIT W/ CLAY IRONSTONE CONCS. CONTAINING Nelumbo

This is so called white SANDY ~~UNIT W/ CLAY IRONSTONE~~ bed above a ~~a~~ 40' COAL SEAM THAT is the upper most of A PAIR THAT OCCUR AT THE BASE of THE SLOPE

~~Upward The~~ The BASAL PART of THE WHITE SANDY IS a CARBONACEOUS SAND W/ CONCS. CONTAINING Nelumbo

UPWARD THE UNIT becomes WHITER & less CARBONACEOUS - a CLEANER SAND -

AT TOP of WHITE SANDY CONCS. CONTAIN Nelumbo + PLATANUS NOBILIS.

6/21/84

8445-

Reconaissance section through the white sandy bed

cm

0 - Top of coal

152.45' Section starts estimated height above coal.

488 16' Nelumbo concretions start. Numerous concs. w/ // striations and apparent trabeculae at rt. ∠'s to them

685.8 22.5' Coryphodon remains
Carb. sand.
Nelumbo concs.

1495 44' Sand becomes lt. grey & iron stained w/ carbon aceous streaks.

2013-3187 66- 104.5' Cleaner sand

3187 104.5' Level of Platanus Nuhilis concs.

Top of section story pavement

6/22/84
at 4:25 pm
Temp 35°
Wind to NW

846 Coals & ~~[illegible]~~ CLAY Fe ST
Dip 20-30° SW 1F
This section is reliable
may be sampled

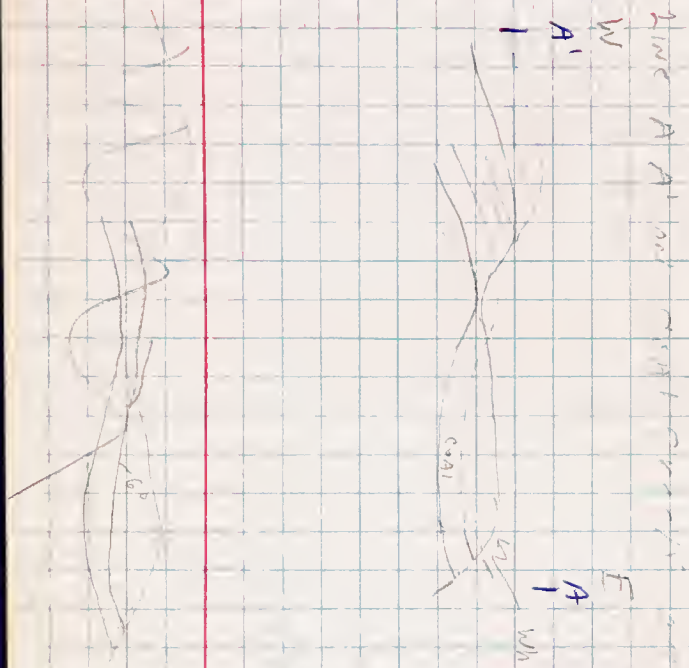
Paleontologist
Nellmbo
Mary Sepulveda
Dot Reynolds
in Clay Fe ST

About 1/4 mi S to SW of camp

6/22/84

Wind 25KN from W temp. 35°

S Shore of Stenkul Fiord



Basic picture on
S side is of W
dipping E.S. Fm.
w subsidiary folds
a syncline seen on
E end of Coal Creek
caused brief dip reversal
to E but adjacent anticline
restores it to W.

N. S.W direction axes of

Syncline & Anticline approach
each other more closely &
dips in anticline become steeper
until it ~~begins~~ becomes isoclinal
in cover. on a hill near
W. margin of photo

A16780-23

Cercidiphyllum sp.

Summary of Structure.

W side of Shirbel Fault

Basically a west dipping graben filling sediments cut by minor faults & cross-folds as well as smaller folds paralleling the strike.

A synoptic interpretation compiled is attached in previous pages

6/23/84

848 SW side of Stenkol Fiord
1.5 Km W. of Camp

Burnt and white sandy
clay, shale and coal.

Up slow
stride [illegible]

Just Above Thick 40' Coal
of Coal Creek Seam.

Yellow ~~white~~ Buff 55 m
clay fe sponge

Monotonia
[illegible]
Pinnatus [illegible]
Just Above 200 yds S
of small anticlinal
flexure
Scutonia

81-Ca Pollen sample from [illegible]
[illegible]

4.I
6 [illegible]

RAPID LAT-LONG FIX FOR 8417

77° 21 1/2' N; 83° 34' W

6/23/84

848 S. Side of Stenkul Fiord.
IN SAND UNIT above Coal Creek Con
& below Cliff Coal

VNIT#18 of 8417

This is Sabinia Sand but really
PART of Coryphodon Sand

HI
UNIT# 20 8417

III

of Slope

8/23/84

849 S. Side of Stenkul Fiord.
in top of Coryphodon Sand
(SALVINIA SAND)

[illegible]
[illegible]
[illegible] next ridge W from
848
Salvinia Sand.
[illegible]
[illegible]
[illegible]

Dx of loc 848
in middle of slope
35

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] ... coarsening [illegible]
[illegible] ... [illegible] [illegible]
above or below The [illegible]
Some X bedding is on a
large scale

Can this be a prodelta
clastic sequence
or lower delta plain seq.

6/23/[illegible]

Temp abt 38°F

Wind in [illegible] again

✓ 1410

Coryphodon Sand. S. Side of

Stenkul Fiord

New Paleocene level

Teeth from [illegible]

[illegible]

Base [illegible] Cont.

Chief Coals

Lower Ident.

This is from upper 2/3rds of

Salmon Sand

Nelumbo (very large)

Amphipsis

Cercis

Metasequoia

6/23/84

S. Side of STENKUL Fiord.

8411

Cut exposure undisturbed
~~Carbon~~ SAMPLE FROM INS.

MIRNOR SS
w/ lens of vertical
basalt as high as
Dynamic metamorphism

Sand & clay to shale
in channel lags

Trough cross bedded

Pre-cut-up deformation

Ba-Zol Talk
Fine upward in lens
41
Fine
capped by thick
coal

Fine to prev. 41
w/ clay partings or
lens as x-bedding
then fine grey shale
w/ bivalves in
ins

6/23/84

8411 (Cont'd)

Cinkage
1 Sand w clay partings
on X beds
up to base of
Cliff Coal

Split of Sh. in Coal
2' above base.

No rooting visible
below coal.
this is not main
Cliff forming
Coal which occ
about 10' higher
than top of sand
Considerable shale
in coaly interval
to base of Cliff Coal

In Sand
A
~~Sh~~
units 10-2' packets
flat top & bottom
Climbing ripples
Growth of Algae x-bed.

(CONT'd)

6/23/84

412 S. Side of Sterkul Fiord.

About 30' below top cut
Salinia sand
in clay & stone concs

Cephalopod
Pecten [illegible]
Metasequoia
Platanus

Thayer X

6/23/84

Eureka Sound Fm.

6470

Fr. Stanford 4 mi. W of Camp

3 Coals at Cliff Coal

Tapping 30° W. apparent

Clift

This locality number is repeated on the next page
K.J.
7.6.84

Sketch of stratigraphic rels. in Stenkul Fiord area S. Side

COAL

COAL

Salvinia Sandy

Thin Coal

Corypholon Sand.

?

Corypholon Sand.

Coal Creek Coal

Sandy Unit.

Coaly Seq.

White Sandy

6/24/84

0⅞ 13 Overcast 75°F [illegible] SW

E side of [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible]

[illegible]
[illegible]
[illegible]

3' thick prominent [illegible]

[illegible] [illegible] roof casts
[illegible]
[illegible]

[illegible]
[illegible]

[illegible]

[illegible]
2nd Sand [illegible] Coal
[illegible]

[illegible] [illegible] Bed
[illegible] ½ °E

Bryant [illegible] Hills
40 W

6/29/80

6413

From this site [illegible]
[illegible] culture
that [illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible]

6413 A [illegible]

6413 B [illegible]
[illegible]

6413 C [illegible]
[illegible]

[illegible] Soils [illegible]
[illegible] [illegible]
[illegible] 6413

Dif to tan fe mottling
w/ [illegible] [illegible] markings
on upper surface

8/13 C (cont.)
Post mats, [illegible]
Cones

Metasequoia cones
Grill
Chaetopteris plumosa

8414 [illegible]

8414 a in ironstone above 8414 Platanus
Ginkgo

UNIT # 23 of 8426

8415

6/27/84
HEAVY WET SNOW
[illegible] 33

[illegible] Forest Site 73

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] Final indexing comes
in [illegible] [illegible]
[illegible] by [illegible]
[illegible] thanks

[illegible] same [illegible]
[illegible]
[illegible]
[illegible]

[illegible] 25/5/[illegible]

[illegible] Section [illegible] Coal Creek

[illegible] Mitchell Plain

[illegible]

W. side of Stanvac Road

Unit no.	Thickness (centimeters)	Description
1	200	base of section - coal [illegible]
2	515	Sandy shale [illegible] with thin coal [illegible]
		25cm [illegible]
3	255	[illegible] shaley [illegible]
4	[illegible]	[illegible]
5	1650	[illegible]

Mukaseauon, [illegible], Platarm

Unit no	Thick (cm)	Description
5 cont		ripple laminated with carbon lens.
6	400	Same as unit 5 but it fines up to base of coal creek coal
7	660	Coal Creek Coal, thick woody coal with silicified forest floor soils in occasional lens
8	525	Clay split in Coal Creek Coal
9	965	Upper Coal of Coal Creek Coal. Top of Anticline Woody. with lots of amber Little pockets of forest floor soil, logs. Standing stump in coal 1.5 h. eye below top
	Pollen Sample 8'-7 ↓	
	8418	Section is offset here.
10	1630	[illegible]
	8'-7.5 →	[illegible] 3m
		We have now moved about 3/8 mi to the west to resume section 30 cm above Coal Creek Coal in gully. Med to fine, mainly fine grained, buff, ferrugenous sand with clay ironstone

Unit no	Thick (cm)	Description
10 cont		Concretions with Nelumbo
11	10 cm	Carb. shale, becoming a coal Pollen sample 8418 a dip 4° West
12	105 cm	covered split
13	50 cm	upper coal, ~~[illegible]~~ ≅ capped by a shale
14	30 cm	Shale,
15	720	Yellow to buff weathering sand intercalated with several thin shales with rare clay ironstone sandy at ≅ 495
16	305	woody coal
17	290	Med to fine Buff - Fe sand with Clay ironstone
18	105	Coal, woody 2nd ledge forming
19	210	Sand split same as 17, somewhat silty

trenches indicate on line of Petro Canada section

Unit no.	Thick.	Description
20	390	3rd prominent ledger forming coal lots of trees. 7° NW Coal becomes shaley towards the upper 20 cm. 84186 Univd clam sample.
→	10	84186 C Pollen sample 0.8 m above base of coal.
		Same level as Salvinia coal 300 m to the NW just below clay (another layer)
21	220	Shales with thin intercalated coal, dark grey - brown
22	165	coal
23	50	base of Salvinia sand is silty grey clay. (basal 20cm)
24	1750	84186 d - leaves in Fe stone Glyptostrobus? Metasequoia Platanus nobilis Cercidiphyllum.

Salvinia Sand

Basal area CA same type sands as unit 17

Unit no.	Thickness	Description
24 coal		Salvinia Sand thins laterally to east to nothing. Is well exposed to the west as the heavily crossbedded Cliff Sand 8418 d Film can cliff
~~23~~	note on next sch & units	Coal Cliff coal is a prominent 3-part coal with 2 main parts
25	990 cm	basal coal is shaley for bottom 2/3 and coaly near the top
26	185 cm	unctuous med grey slightly silty clay split Pollen Sample 8418 e
27	230 cm	coal no. 2 woody
28	68 cm	split between coal 2 + 3 ~~[illegible]~~ shale
29	255 cm	coal no 3

Unit no.	Thickness.	Description
30	325 cm	gray shale with intercalated coaly beds
31	330	woody coal, top becomes silty and sandy upper 10-15 cm.
32	43 top 7 155 / 1155	thick ~~[illegible]~~ sand with lots of ironstone concretions yellow-tan fine-med.

8418 f

Zingiberopsis	Equisetum	Vinea	Cercidiphyllum (Saturnia?)
Isoneura!	Cones	Carabid Beetle	Pterospermites (Cladrastis)
Cercid. shoot	Branches	Metasequoia	Platanus rotundis
Shoot fruit	Nuts	Magnolia sp	Ginkgo
Monocot	Glyptostrobus	Plat. raynoldsi	Nelumbo
	Pinus tenuiseris?	Betula stevensoni	Unioids
	Alnus?	Taxodium	"

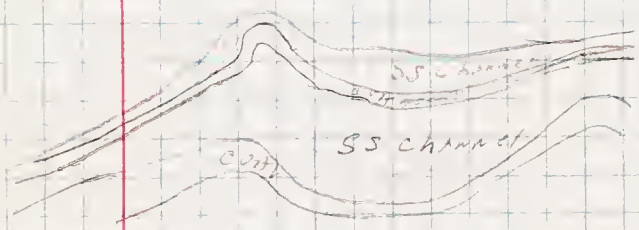
33	55 cm	coal
34	223	gray shale pollen sample 8418 g w/ clay fl-stone

Top of section in synclinal trough Missisoul surface

6/25/89

Summary of Studies
Field Days for

Regional dip ~~[illegible]~~
~~[illegible]~~ to W
Folds and interruptions in
this trend are minor
The result of penecontemp-
oraneous folding due to
compression of thick coal
seams within the sand
channels



Folding does not extend
under massive channel areas

Areas of thick coals & channel
focusing characteristic of
a tectonic situation. Lack
of marine fossils would seem
to indicate upper delta.

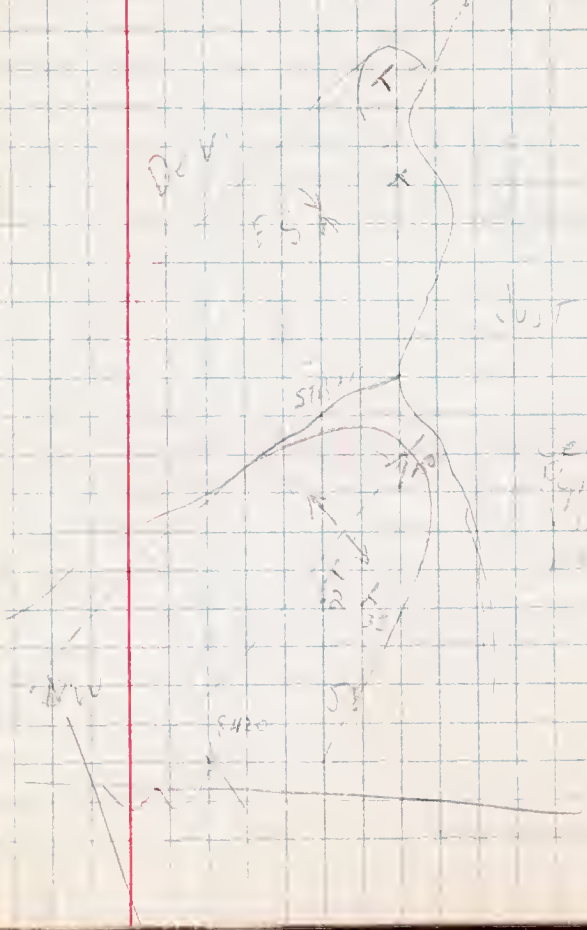
6/26/84

8419 Ended E.S. on Tanya on Highhill Field

Highhill Field

Dir. 32° SE on e line of Artificial on map

8420 62° aht



6/26/84

Flow around BASIN

S CONTACT is a FAULT
HS is WRONG

E. CONTACT is a
Depositional one.

8421 STRUCT. Fault E. SIde
of HILL

Fossil is in CATH. Tuff

= UNIT #3 of Sec. 8421

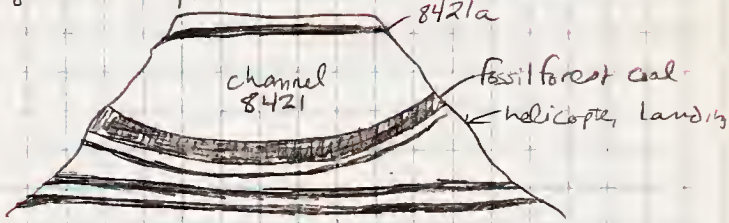
6/26/84

8421

Dip to NW at 30°
Nuts Thick and
Level of Assist
Forest in Yellowstone
Hill.
Soil Stiff Forest Cut
a Cavity.

Section 8421 On cliff north of Camp across the forid

general appearance



Unit no.	Thickness (cm)	Description
1	170	rippled quartzite sand.
2	40	F↑ to carbonaceous sand + clay
3	825	coal
4	50	cemented mudstone soil crust
5	140	coal
6	165	yellow weathering mudstone with ironstone conc.
7	370	coal with petrified stumps and soil lenses ironstone.
8	990	cross bedded sandstone carbon on bedding planes fine grained, buff color ironstone
9	165	carbonaceous shale w/ ironstone
10	100	coal
11	450	gray clay w/ironstone conc interbedded nodular soils

Unit no	Thickness (cm)	Description
12	1520	Coal with numerous petrified tree trunks and soil lenses. Stonewood forest level (Stone garden)
= UNIT 15 IN SEC 8426		
13	3300	Yellow weathering ironstone rich sands. Carbonaceous and coal rich at base, becoming more sandy up section with lithified (Fe cemented) coarse sand lag layers

Fossil leaves loc. 8421
Cercidiphyllum
Platanus raynoldsi
Equisetum
Metasequoia
Betula stevensoni

This sand becomes much thicker to the west and is the lenticular sand visible in the cliff face.

Vertebrate locality #7 Coryphodon bone
Turtle
possible Carnivore jaw

Unit no.	Thickness (cm.)	Description
14	240	coal with ironstone locality 8401 a P. raynoldsi Metasequoia Equisetum.
15	165	Sand w/ Fe-stone Equisetum P. raynoldsi Metasequoia cross-bedded
16	100	coal
17	200	clay oplit
18	265	coal
19	315	gray shale which C↑ to sand in it's look meter
20	30	coal
21	115	gray shale C↑ sand.

END OF SECTION IN SIDNEY PAVEMENT AT TOP OF HILL.

6/27/84

8422 Summerton Peninsula
[illegible]

Margin of Basin
Steeply dipping sst
dominated [illegible] x-bedded
[illegible] of med gr, ss
white to yell, [illegible]
tabular & trough x-bedded
w lignitic laminae &
[illegible]
Dip measured is [illegible] 55° NW

[illegible]

[illegible]

[illegible]

[illegible] in [illegible]
[illegible] coal along base at
slope

8422 D Main body [illegible]
[illegible] coal [illegible] where
[illegible] dominant
[illegible] Dominant
[illegible] other [illegible]

Ace

8/23 [illegible] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] sample 8/23 Shake [illegible]

[illegible]

[illegible] 6 [illegible]

[illegible]

[illegible] sample [illegible]

~~[illegible]~~ [illegible]

[illegible]

[illegible] it was [illegible] from

[illegible]

Section ~~[illegible]~~ at 8/23 [illegible]

[illegible]

[illegible] or [illegible]

[illegible]

6/27/84

8473
j&c

unit no	thickness	Description
1	—	Base of section, top of Petro Canada Coal No. 6, shale and bony coal
2.	1960 cm	Clayey sandstone fine grained buff to limonite yellow clay ironstone concretions lignitized logs arkosic pockets cross bedding, tab and trough fine to med grained at 6 H.I. Carbonaceous debris on the bedding planes at 10 H.I.
3.	70 cm	Impure coal w/amber + silty splits
4.	10 cm	chippy gray shale
5.	75 cm	Ferruginous siltstone
6.	1420 cm Bone at 875cm Fe-stone layer at 1360 cm	Sandstone channel with vertebrates, sub angular coarse sand, ironstone nodules, leaves, Cercidphyll. seeds. lithic subgraywacke

top of section

in rubble covered dip slope

6/27/84

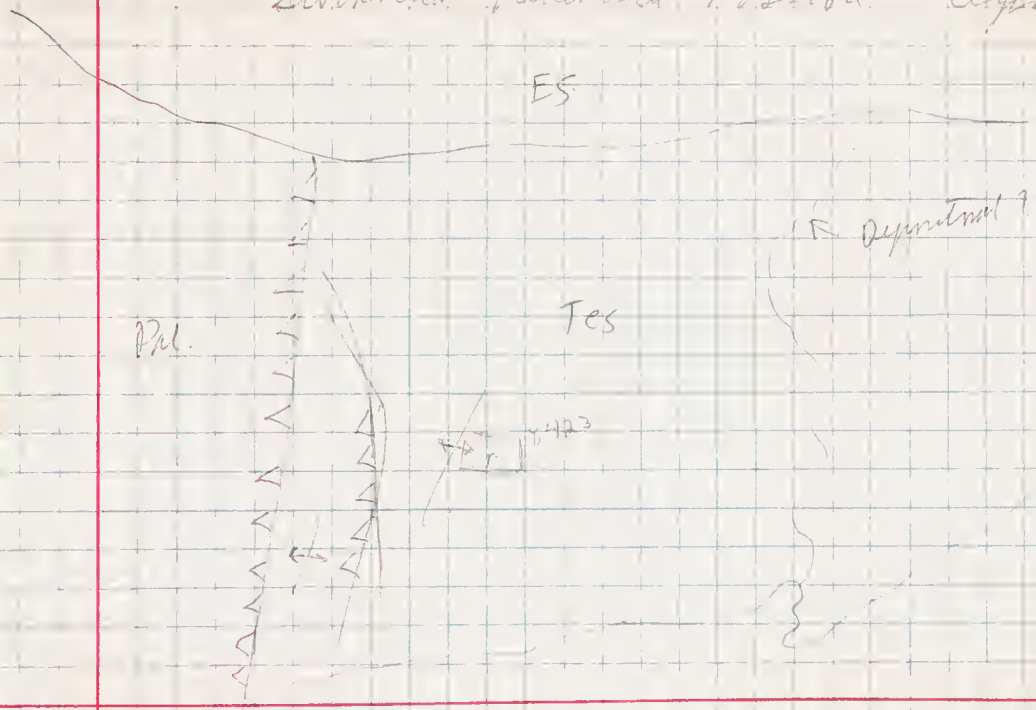
Flying up the northern branch of Mackinson Inlet in E. central Ellesmere Island

Extension of E.S. F.m. ~~marked~~ mapped along the Inlet

Two masses mapped at 78°35' N 81°55' W are Paleozoic
Found large mass of E.S. in a fenster shielded by Pelagic from West density of the ice margin along the extension of Mackinson Inlet. These are coaly and in part flat lying and then secondarily folded under the Pelagic shelf.

Leads me to believe that this mass may connect w/ the mass in Burwash through N.S. valley to E. of Mackinson and then E. of the large island just N. of the Peninsula.
Dominant style in this part of Ellesmere appears to be N by NNE trending thrusts. Could all of the E.S. here including that in Stuckall be fenster

Sedimentos Peruanos Vásquez [illegible]



Sec. 8424

12/8/84
weather: clear
[illegible] 25 kn
wind

W side of Strike Valley about 1½ mi
of its termination
[illegible]

UNIT NO	Thickness	Description
	[illegible]	[illegible] base [illegible]
	[illegible]	[illegible] interval
1	185 cm.	coal with 10 cm sand interval 1½ m. dip 2½ NW below top
2	20 cm	sandstone [illegible]
		[illegible]
		[illegible]
		[illegible]
		coal. 8 cm [illegible] above [illegible]
		[illegible] 40 cm with [illegible] clay [illegible]
3		[illegible] gray shale 20 cm thick. Interbedded sequence of [illegible] gray shale and [illegible] beds [illegible]

3

55

165
9
1485

unit 3 cont.	350 cm	[illegible] clay [illegible] cross with [illegible] plants - [illegible]
4	175	coal
5	1475	"white sandy" - light, yellowish gray siltst. with tabular cross beds with carbonaceous fragm. forms a prominent [illegible] on slope. thin lignitic units in upper portion. [illegible] [illegible] coal at 1155 cm, coal very local.
6	395	gray [illegible] shale
7	[illegible]	coal, [illegible] clinker [illegible]
8		sandstone, [illegible] X bedded lgt. gray [illegible] [illegible] [illegible] very small [illegible]

145 w. clay Fe concs. w.

9. 159 thin layer

10. 70. [illegible] as unit 8.

[illegible] grey shale
w. clay Fe conc.
→ 84-240 [illegible]
[illegible] from
[illegible] shale
[illegible] Fe
[illegible] Fe
[illegible] ←
Interbedded with ss
[illegible] 20 cm
[illegible]
clay Fe
[illegible]
[illegible]
B [illegible]
[illegible]
[illegible] 35 cm
At B [illegible] 20 cm
coal.

145

44

25

	635	→ 84-246 pollen sung. very good ← cones from 160 cm.
12	70	brownish gray clayey silt, Fe oxides
13	130	coal ~~[illegible]~~ bright ~~[illegible]~~ ~~[illegible]~~
14		yellowish gray [illegible]
15		[illegible]

17	50	coal
18	140	sandstone as 16 starts w. 20 cm grey clay base
19	270	coal w. clay Fe conc. ledges w. salt horizons.
20	335	sandstone as 18 starts w. 30 cm clay [illegible] clay Fe conc. etc.
21	795	[illegible] resistant [illegible] 42 [illegible] to [illegible]
22	140	[illegible]
23	50	coal w. [illegible]
24	[illegible]	[illegible]

8430

[illegible]

[illegible]

[illegible] 70 S

[illegible]
WORD
[illegible]

6/29/8[illegible]

STOVEWOOD

E426 SECTION ON ~~Yellowstone~~ [illegible]
side of Stephens Fiord
[illegible]

[illegible] Coal [illegible]

SECTION STATS IN E.S. FM.

UNIT	THICKNESS	DESCRIPTION
		section cuts at base of thick coal below [illegible] fiord bay unit 4, stream [illegible]
1	7.5	coal
2	1.55	coal zone, indurated [illegible]
3	200	light reps. [illegible] flora dev. on [illegible] soils.

4	1025	SS. channel with [illegible] 20 cm [illegible] [illegible] up to 1 m yellow [illegible] with concreted [illegible] Dirty sand w. lot of clay. Cook. [illegible] 20 cm. thick on backing [illegible] channels, Channel [illegible] to north. Some thin [illegible] intervals [illegible] 1 cm [illegible] about 495.
5	445.	[illegible]
6	165.	[illegible] shale w. 2 cm thick [illegible] silty limestone yellow [illegible] 30 cm above [illegible]

		→ [illegible]
		[illegible] 50 cm
		above base of [illegible] ←
7	525.	lignite dipping [illegible] into channel
5	205.	shale, [illegible]
7	170.	lignite
10	20.	[illegible] shale.
		→ SH 2.6 b [illegible]
		base of [illegible] ←
		Shale is 20 [illegible]
		[illegible] yellow weathering
11	30.	30 [illegible]
		weathering [illegible]
		[illegible]
		[illegible]
		applied.
12	235.	Brownish [illegible] shale, [illegible] Fe [illegible]
		[illegible]

		[illegible] 195 cm
		235 cm
13	35	lignite
14	215	red gray chippy shale
		25 cm in [illegible]
		dr. [illegible]
		[illegible]
		[illegible]
(15	1000	lignite [illegible]
		[illegible] 30 cm
		995 [illegible]
		455

= Unit 12
in Sec. 8421

[illegible] at 745 [illegible], top at 815.

[illegible] section [illegible] as Fallen

~~11~~ 6 30 Chippy cork [illegible] cobbonco[illegible]

[illegible] Chactifilia (8426d).

~~11~~ 12 230 Becomes [illegible]

[illegible] 130 [illegible] in shape up to 10 cm. thick.

~~10~~ 13 510 Ignite

~~1~~ 14 510

16 145,

18 135.

19

20 [illegible]

21 245,

[illegible]

[illegible] Charge

Cross over at 1.5

At 740 sand begins

light gray [illegible]

[illegible] added

[illegible]

[illegible] At 1.5 [illegible]

[illegible]

[illegible]

[illegible]

[illegible] 2.15

[illegible] 2.55

22	465.	[illegible]
		[illegible]
		[illegible]
		165. [illegible]
		[illegible]
		[illegible]
		[illegible]
23	215.	Lignite w. clay Fe concs. loc. 7973 + 8415
24	350.	[illegible]
		[illegible]
		[illegible]
25	225.	Lignite
26	[illegible]	[illegible]
		[illegible]
		[illegible]
27	80.	Lignite

28	40	
29	50	
30	165	
		mulstone and [illegible]
31	40	
32	100	Light
33	215	

34	405.	[illegible]
		[illegible]
		[illegible]
		[illegible]
		with
		Lignite, thin sand
		intrusions above 330
		up to 5 cm
35	375.	Lignite [illegible]
		[illegible]
		[illegible]
		horizontal [illegible]
6	90.	[illegible]
		[illegible]
7	330.	[illegible]
		[illegible]
		[illegible]

Good cap of the
Anticline

6/29/84

Loc. 8427

[illegible] Valley

Mbr III [illegible]

[illegible]

[Too much footage in estimate]

8 SE [illegible]

8427b

[illegible]

6/29/84

Sterling Fault

Just downstream from the outcrop on the S. side of the river is a same terrace of glacial deposits with a ~~high proportion~~ of reddish ~~weathered grey~~ coloration in a few places probably derived from Dennain rocks. The predominant aspect of this rock is grey w/ a reddish cast.
Looking directly across the main ~~are~~ glacial valley from this point other same terrace deposits can be seen on the W side of it

It also appears that there are E.S. Cardmacous rocks below the strand plane of Dennain Rx and that this plane dips S at 5-6°. In addition the E.S. Mbr. [illegible] rocks on the NE side of the Sterling River also appear to be overthrust by the Dennain rx.
The high bed overturned and isolated ~~these then~~ folding at Sterling appears to be deep associated w/ ~~this~~ overthrusting. Thus Sterling Fault is a F-rather not a Arbon

6/30/84

Left Stenkul Fiord at 10:30a by Twin Otter NAW piloted by Doug McLeod

Flew ~~downstream~~ up main valley to examine walls of valley on W side. Material has a carbonaceous look and is somewhat similar to E.S. Fm. but could not be sure.

We took off heavily loaded and I had to help the pilot repack to shift some of the load around. At the last moment the wind shifted to a direct W lick and strengthened allowing us a better takeoff than anticipated

Landed at White Bluff and set up camp by about 3. Had a late leisurely lunch on the "Terrace" in our lower chalet.

8428

White Bluff on Foshein Peninsula

[illegible]

[illegible] Canyon 1st N. [illegible]

Camp

On hill [illegible]

[illegible] 200 yds E. of [illegible]

Sulphurous silty dark grey

Smells of sulphur

No coals

Many silt lenses

Angular transitional to E.J.

Position as [illegible]

Pollen sample 8428.

This represents either

[illegible] tributaries

or [illegible] of E.J.

[illegible] tributaries

Section

Section starts in stream bottom at 8428

	Thickness m	Des.
1	6.0	Fissile black silty shale in [illegible]

At base of section a 1 m thick lens of

7/1/84

8-128

[illegible]

[illegible]

2 1.0 [illegible] 11 [illegible] 70 [illegible]

3 [illegible] Sh, fisse as [illegible]

[illegible]

[redacted]

Test 3

5 6.4M CLAY to Stiff Surface
Scattering at top
of Section 2

6 [illegible] SHALE as at #1

Top of Section Tundra
Soil

7/11/84

40 # Temp 40°.

Section 8479 Through Inoch. Apu[illegible]

locality [illegible] white [illegible] 7

~~[illegible]~~

UNIT	Thickness	Description
[illegible] Fm		
1	16.5'	Fissile chippy, dark grey to black shale w/ [illegible] 2 in 6 [illegible] thick [illegible]
		[illegible]
		[illegible]

Section starts [illegible] 20 [illegible]

[illegible] exposed [illegible]

[illegible] where this Sale [illegible]

[illegible] intersects [illegible]

[illegible] Sand Fm. Mbr I

[illegible] a little [illegible]

[illegible]

2

(21.5 m)

[illegible]

[illegible]

This Co[illegible] [illegible]

[illegible] at this level.

[illegible]

[illegible]

[redacted]

3429

Tops & bottom of
chase are irregular
and differ like
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

B

200 feet vertically
to a small lamina
on line of section
[illegible] a dark [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[redacted]

7/1/24

2/4/21

patch x water

Sis.

0.2 m ab below

Mass

m: dst

10.2 m

100 yds

[redacted]

9/2/84

8431 Member II Eureka Sand Fm
at 8:30 a.m.

Metasequoia
Cercid
Platanus Reynoldsii

IN Clay Fe stone Concs
Associated w Coals

Mbr II Tabular ss & lignitics
upper & lower contacts II
coals w/much woody material
in them very rhythmically
bedded sequence

7/2/84

Flew to Blacktop Mt. E. Face
and thence along the
K + Tertiary contact
S. ward.

KC - Christopher - A black shale sc.
Kh - Hassel - Rusty colored ss.
K-K - Kanguk - Black shale.

Here as in Valley of Camp
Creek the top of the
Kanguk is transitional to
member I of E.S.

Member I
lenticular white ss associated
w coals + laminated black +
brownish grey ~~ss~~ sh, siltst,
ss.

Contact between Kanguk + Mbr I
is very well shown at
GSC loc 143 + jct. of
Bemis + unnamed creek
(on Sidre ~~Fault~~ River map)

Mbr I appears to be 100-200
m thick

7/2/84

Helicopter Traverse
Black Top to White Bluff

Flew up Camp Creek.

Mbr I until vicinity of Inoceramus loc. & then Kangjuk in bluffs & along c. bank of stream to w. white Channel at camp

very important feature of the
wood found in the Eureka Sound
Fm. is the lack of Charcoal.
None found in any bed through
summer.